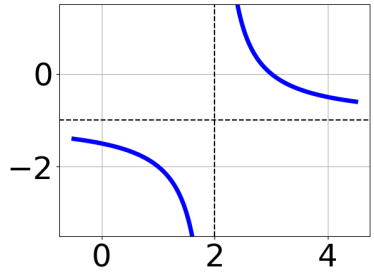
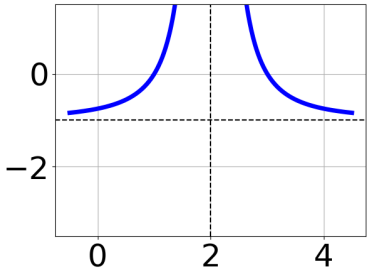
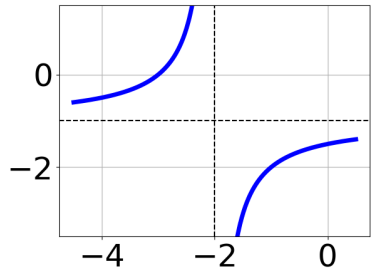
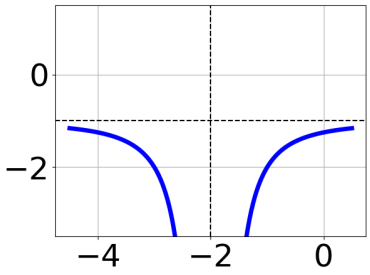
1. Choose the graph of the equation below.

$$f(x) = \frac{1}{x-2} - 1$$

A.


C.


B.


D.


E. None of the above.

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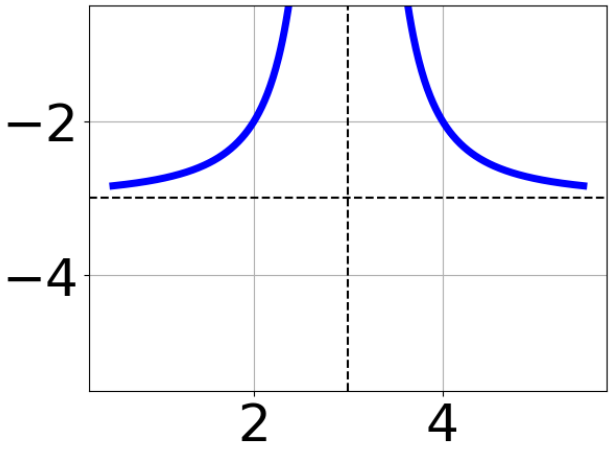
2. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{x-3} - 3$

B. $f(x) = \dfrac{-1}{x+3} - 3$

C. $f(x) = \dfrac{-1}{(x+3)^2} - 3$

D. $f(x) = \dfrac{1}{(x-3)^2} - 3$

E. None of the above

---

3. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-4x}{-7x+4} + \frac{-6x^2}{-28x^2+37x-12} = \frac{3}{4x-3}$$

A. $x \in [0.71, 0.88]$

B. $x_1 \in [0.58, 0.67]$ and $x_2 \in [0.56, 0.72]$

C. All solutions lead to invalid or complex values in the equation.

D. $x \in [0.8, 0.93]$

E. $x_1 \in [0.58, 0.67]$ and $x_2 \in [0.73, 1.12]$

---

4. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7}{7x-3} + -6 = \frac{5}{-21x+9}$$

A. $x \in [-0.26, -0.19]$

B. $x_1 \in [0.39, 0.58]$ and $x_2 \in [0.63, 2.63]$

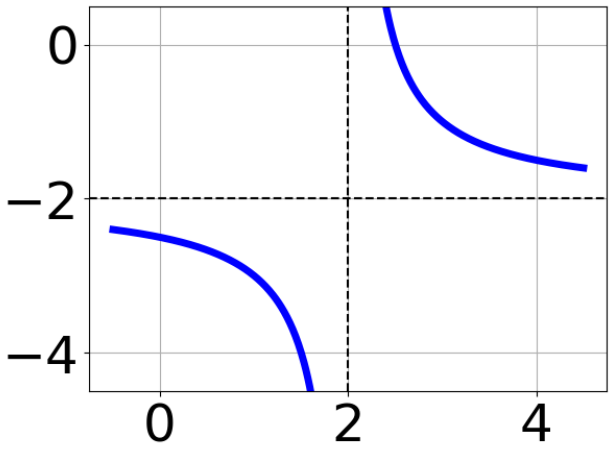
C. All solutions lead to invalid or complex values in the equation.

D. $x \in [0.63, 1.63]$

E. $x_1 \in [-0.26, -0.19]$ and $x_2 \in [0.63, 2.63]$

---

5. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{(x-2)^2} - 2$

B. $f(x) = \dfrac{-1}{x+2} - 2$

C. $f(x) = \dfrac{1}{x-2} - 2$

D. $f(x) = \dfrac{-1}{(x+2)^2} - 2$

E. None of the above

---

6. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{24}{48x+18} + 1 = \frac{24}{48x+18}$$

A. $x \in [-0.1, 1]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [-1.38, 1.62]$

D. $x_1 \in [-0.5, -0.1]$ and $x_2 \in [-0.1, 1.3]$

E. $x_1 \in [-0.5, -0.1]$ and $x_2 \in [-0.5, 0.2]$

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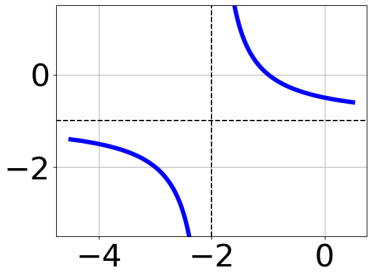
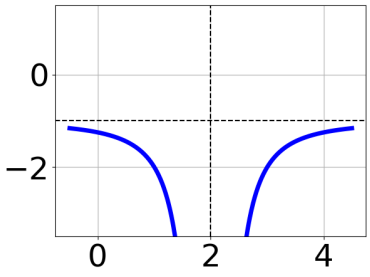
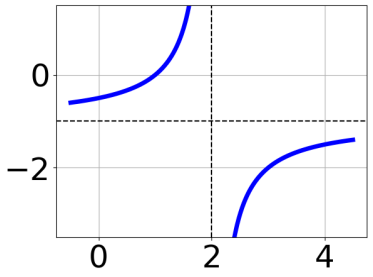
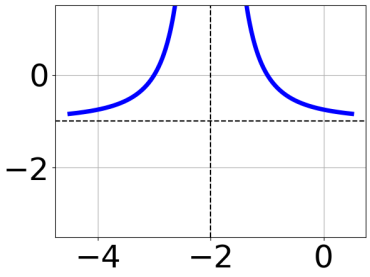
7. Choose the graph of the equation below.

$$f(x) = \frac{-1}{x+2} - 1$$

A. 

C. 

B. 

D. 

E. None of the above.

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8. Determine the domain of the function below.

$$f(x) = \frac{6}{20x^2 - 8x - 12}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-17, -11]$ and $b \in [16, 17]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.6, 0.4]$ and $b \in [0, 6]$

C. All Real numbers except $x = a$, where $a \in [-17, -11]$

D. All Real numbers.

E. All Real numbers except $x = a$, where $a \in [-1.6, 0.4]$

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9. Determine the domain of the function below.

$$f(x) = \frac{3}{25x^2 - 10x - 24}$$

A. All Real numbers except $x = a,$ where $a \in [-1.4, 0.4]$

B. All Real numbers except $x = a,$ where $a \in [-21, -19.1]$

C. All Real numbers except $x = a$ and $x = b,$ where $a \in [-1.4, 0.4]$ and $b \in [0.1, 2.7]$

D. All Real numbers except $x = a$ and $x = b,$ where $a \in [-21, -19.1]$ and $b \in [28.7, 30.2]$

E. All Real numbers.

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10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{3x}{-6x-4} + \frac{-7x^2}{-24x^2+2x+12} = \frac{4}{4x-3}$$

A. $x_1 \in [-1.55, -0.69]$ and $x_2 \in [-0.21, 0.48]$

B. $x \in [0.45, 0.96]$

C. $x \in [-0.84, -0.5]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [-0.84, -0.5]$ and $x_2 \in [0.56, 0.89]$
